

**AMENDMENTS TO THE ABSTRACT:**

Please delete the original Abstract and add the following new Abstract:

A manufacturing method of a gas sensor element having a solid electrolyte body and a protective layer has following steps, measuring a radius of the body at position A on a surface of the body, spraying a molten protective-layer material on the surface of the body to form the protective layer by a plasma thermal-spraying equipment, and measuring a radius S of the body with the protective layer at position B intersecting to the point A on the surface of the protective layer coated on the surface of the body. The spraying amount of the material is controlled based on an average difference between radiiuses S and R as a thickness of the protective layer in order to form the protective layer with a desired thickness.